

SEQUENCE LISTING

<110> THE UNIVERSITY OF BRITISH COLUMBIA
 RUSSELL, James A.
 WALLEY, Keith R.

<120> TOLL-LIKE RECEPTOR 2 (TLR-2) HAPLOTYPES PREDICT OUTCOME OF
 PATIENTS

<130> 80021-772

<140> NOT YET ASSIGNED

<141> 2005-03-04

<150> US 60/549,560

<151> 2004-03-04

<160> 2

<170> PatentIn version 3.3

<210> 1

<211> 401

<212> DNA

<213> Homo sapiens

<400> 1

```

ccccaaatTT aaaagagggc aagaaaagag agacaataga acataaaaaca aatgggacaa      60
gaataaagta catagttgtc acagtccctt ggggtgctgct gtaacaaaat acctgagact      120
gggtaattta caaagaacag aaatttatcc attcatgggt ctggagtctg ggaagtccaa      180
gattgaaggg ctgcatctgg wgagggtcat ctggctacat tataacatga tggaaagcat      240
cacatgggtga gagagagcaa gagaggacag aacttacttt tataacaaac tcattctcac      300
aataaactgc tcccttggtg ataacattaa tccatttatg aggggtacagc cttcataacc      360
taatcacctc ttaaaagggt ccacctctca gctcgcagtg a                                401

```

<210> 2

<211> 33164

<212> DNA

<213> Homo sapiens

<220>

<221> Unsure

<222> (12165) .. (12165)

<220>

<221> Unsure

<222> (12207) .. (12306)

<220>

<221> Unsure

<222> (24073) .. (24172)

<400> 2

```

tgactctgtt attaagattt ttaccaaaga gcaactgtag ctatgggtggc ctgacttgaa      60
gggacagacc aaacaaacaa caaaacacaa aacaaaacaa acaaacaaca aaagcaagag      120
cagaaaactat tggaaaatga tttattcacc aatatTTTaa aggttcttcc tgttctaagc      180
aaggaacatc ttttaagttct ttataatga cccattttac atttacaaaa actgccagaa      240
gttgacagca tgttttgggg gtttctaagc tatcagttaa ttttttgggg tacagtttta      300
ttgataaact aacagagtag aaaaaatcta atggaatacc cccaaattta aaagagggca      360
agaaaagaga gacaatagaa cataaaacaa atggggacaag aataaagtac atagttgtca      420
cagtcccttg ggtgctgctg taacaaaata cctgagactg ggtaatttac aaagaacaga      480

```

| | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| aatttatcca | ttcatgggttc | tggagtcctgg | gaagtcacaag | attgaagggc | tgcactctggw | 540 |
| gagggctcatc | tggctacatt | ataacatgat | ggaaagcatc | acatgggtgag | agagagcaag | 600 |
| agaggacaga | acttactttt | ataacaaact | cattctcaca | ataaactgct | cccttgggtga | 660 |
| taacattaat | ccattttatga | gggtacagcc | ttcataacct | aatcacctct | taaaaggttc | 720 |
| cacctctcag | ctcgcagtga | gccgagatca | tgccactgca | ctccagcctg | ggtgacagag | 780 |
| cgagactctg | tctcaaaaca | aacaaacaaa | caaaaattcc | acctctcaac | actgtttgcat | 840 |
| tgaagatgaa | atthccaata | catgagcttt | ggggcacaca | ttcaaaccat | agcaatagtt | 900 |
| caattacttt | aaagcccaaa | atgtcagtaa | ttatatttaa | tgcaatttaa | tacatcagta | 960 |
| actaaatgag | atagactaaa | ttttatgata | atcagactaa | tattatcaga | ctagacttca | 1020 |
| aaacaaccca | acaatcatat | gctgtttaca | agagacacat | ttatgggatac | taaaagggtat | 1080 |
| aaagtgaaca | gatgcaacca | tttatcaaaa | gaaagctggt | gtggcaatat | tactattaga | 1140 |
| caaaatagaa | ttaggaaaaa | aatcataact | gtagataaac | gtttcactaa | gttaaagggt | 1200 |
| tacttgagaa | gaaataaaaa | ttttgaattt | ataagtactt | ataacaacat | taagaaacta | 1260 |
| gaaaatagaa | aaagaataga | gccaaaattg | actgaaactag | aaaaatagaa | aattcataga | 1320 |
| aaaatccaca | atcatagtgg | gagattttat | catacatctc | tcagtaactg | atagaaaaac | 1380 |
| cagacaaaaa | tcaataagga | taaagaaaat | gcgaacacaa | tgtagtccac | ataagggaacc | 1440 |
| tatactactt | ccaacagcag | ctgaaatcac | agagcatact | taaaatctga | ccatatactg | 1500 |
| gctcatagag | taaattgcaa | tacattttta | agaattttaa | tcatacagaa | tatgtcttct | 1560 |
| gaccataatg | caattaaagt | agaaaagaac | agaaaaactt | atagaaaatt | ctcatatatt | 1620 |
| tggaaattag | taaatttcta | aataacccat | gggtcaaaaa | ataatcagaa | tgaaaatcag | 1680 |
| aaaatatttt | taatgactta | tgaaaaaaat | tacatatata | aacttgctcag | atgcacctaa | 1740 |
| actattgctt | aaaggaaact | tacaacctta | agtgcataata | ttagaaatga | agagtgcaga | 1800 |
| aaaatgaatg | agcaagcaaa | taccttaaaa | actggaaaaa | gaatagtaaa | ataaatccag | 1860 |
| agaaatcaga | acaggggaaa | taataatata | agaatagaaa | ttaatgtgct | agaaaatagg | 1920 |
| ggatctatca | agtcagaagt | tgattttttg | aaaatgctaa | taaaaatgat | gaacctctgg | 1980 |
| caagacaata | aaagctggta | caaataactc | atctaaggaa | taaaattgag | gacctctctt | 2040 |
| ttgttaaagt | acataagcag | gaggccatta | tcttgagact | gtctctacac | tttgagttct | 2100 |
| tacataataa | actgcaacct | aatttagtat | actacataaa | caaactgaaa | cctaacttag | 2160 |
| gagtcctttt | ttttgtaatt | aatagctaaa | tttccaccaa | atcataaata | gccaagcttt | 2220 |
| agccaatcac | aggcagccaa | ctgatcagac | tatgcccaaa | caaggtaaat | gcctattaca | 2280 |
| ccatacccaa | ataaggcaga | ctcctagctg | aagccaatca | ggtgattact | atgctcttgt | 2340 |
| gtttggccta | taaaagctca | ctgctcacac | tgttggatgc | tctctgaaac | ttttgtgaat | 2400 |
| ctgagtgtctg | cctgattcat | gaatcattct | ttgtctaaaat | aaactctgtc | aaatttaatt | 2460 |
| tgtctgaagt | ttctctttta | acagtgtttg | gtgttgcaag | caggatccaa | aggagacctt | 2520 |
| tagtgactcc | caggagacct | atagtgactc | ccaggagctc | ttagtgaaca | agtgaaggta | 2580 |
| cctgtggggc | tcattgtgcc | cattgctctt | tcactgcttt | caactggtag | ttgtgggtaa | 2640 |
| gttctgtctc | agacttgagc | actatacatt | tgcattttca | gctctctgac | tttatttgag | 2700 |
| caattctttg | atggattggc | tccagaattg | gattggattc | agtgaagaaa | ctgaaactgg | 2760 |
| actggtgtctc | taggaggcct | caagtagata | aggttactag | aagacagggg | atcctgggct | 2820 |
| tatctggatt | taaggagtct | acaactccat | ctgcaactcc | agccgatttc | atthataaga | 2880 |
| attatggacc | aagaacctgt | gctttttctag | agaaatgtgt | gagccttact | aaaggtaact | 2940 |
| tagaattaca | atggactgcc | gagaccagct | cggctcgtgga | gaccctaacc | ccagcagcgc | 3000 |
| tagaggaatc | aaagacacac | acacagaaat | gtagagtgtg | gagtgggaaa | tcaggggact | 3060 |
| cacagccttc | agagctgaga | gcccctaaca | gagatttacc | cacatattta | ctgacagcaa | 3120 |
| gccagtgata | agcattatcg | ctatagatta | tagatttaact | aaaagtattc | cttacaggaa | 3180 |
| acaaagggat | gggccgaac | aaagggatag | gctctggcta | gatgtctgca | gcaggaacac | 3240 |
| gtccttaagg | cacagattgc | tcattgtatt | gtttgtggctt | aggaacacgt | taagcgggtt | 3300 |
| tctgccctgg | gtgggccagg | tgttccttgc | cctcattcca | gtaaaccac | aaccttcagc | 3360 |
| gtgggcgtca | tggctgtcac | aaacatgtca | cagtgcctgca | gagattttgt | ttatggccaa | 3420 |
| atctggggct | agtttatggc | caggtttggg | agcctgttcc | cacatgtccc | ccttttttgt | 3480 |
| tttgcaaaagc | aataaaaagca | aaggcagctt | tgtcacagtg | agctacttct | tgcaggagtc | 3540 |
| gggattcgca | tatgcatact | atacaaagac | aaacaacaca | gattaaaagc | ccaaccatca | 3600 |
| ttgaaatcac | agagcttcca | agtgtcttta | tctattttta | tgggttaatc | actgctaatc | 3660 |
| tgtctgcagc | tccttcaagc | actccagttc | ctggcattaa | ggtctggtgt | gcctggaatg | 3720 |
| ctthaaatat | ttgttctttt | aattattgca | tatggaaaga | caagtttgta | gagtgtcttc | 3780 |
| taggtgcttt | tttattcttt | cctgaatttg | gtcttattta | agagccatta | atagtttcca | 3840 |
| caaatcctta | tgttttagctc | ctacagcggg | ccatatcatt | tgagggtgag | gtgccactat | 3900 |
| accatcatgt | ttccagataa | taggaactct | tgccatattt | cttgctattt | ctaccatctg | 3960 |
| accattttgt | ttagaccagc | taaacatagt | gtggccatgg | cacgcagact | gagaggtgca | 4020 |
| atttaagcta | aacatccct | taggggacca | atcaataatg | attccatagg | aatcactcg | 4080 |
| cagcacctct | gcctattctg | caatgcaatc | ttcccaaca | agtatgttca | ttattttctgg | 4140 |

| | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| ccaggtccaa | ttctgtttac | aaatagggtt | ttgagggcaa | tatgcctcaa | ttatagaaac | 4200 |
| agatttatta | tggtaaatac | tgagatcaga | aagcatgtgt | aactgtgtca | tagaatgatt | 4260 |
| acatccaggc | attatttgca | gccaagattg | ataaatatgc | ccaataagta | taattgttct | 4320 |
| ctgtgtttagc | ccttggtgaa | ggaatactaa | tggcaatggg | gatcactgct | atcatagcta | 4380 |
| tcattaaatt | actcattgtg | actggttgtc | ccactttcct | cagggtttct | tccaccctct | 4440 |
| atggcagttt | cttgatctgt | ccccaggtag | atggctgtgt | ttgatggttg | ttgctcgtga | 4500 |
| tagtttgggt | cctcctcagc | atcagtctcg | acatggctgc | aaccagaggg | tccctggggt | 4560 |
| cctcccagaa | tctcttcctt | ggcatctggc | tcatgataag | gtttcagggtg | tcttgatggg | 4620 |
| atccaaatca | gctattgatt | ctggcctgga | gaaacacaag | cataacctct | accccaagtt | 4680 |
| attatttttac | ctattttcca | actttttgtt | gtcagatctc | tgcaccaagc | cagttgttct | 4740 |
| gcttctgttt | ttgcagctgg | tttctgtaga | tgctcttcag | ctgctgatag | catctggcct | 4800 |
| ttaggcaggc | tcaaaaaatt | taaagtcatt | aatgctagat | tcagttgtat | atgggtgtcc | 4860 |
| tgtaatccct | gtttcccttt | tttgcttttg | caactgctgt | ttcagggaga | gattcattct | 4920 |
| ttctacaatg | gtttgtcctt | gagaattata | tgggatgcca | gtaatgtgtt | taatattcca | 4980 |
| tatagagaaa | aatgtagcta | gagcttggct | agtatagcct | ggggcattat | ctgttttaac | 5040 |
| agaagttgga | attcctatca | ccacaaaaca | ctgcaaaagg | tgatgcttaa | cacatgcagt | 5100 |
| ctcctgattg | gcatgtagcc | cagacaaagt | gagaaaaggt | gtccacacat | acatgtacat | 5160 |
| aagctagtct | cccaaacgag | ggaacgtgtg | acatccattt | gctaaagata | attaggttcc | 5220 |
| aatcctcgag | gattaactcc | tcctgttaaa | gatgaggaat | gcaccatttg | gcaagttggg | 5280 |
| catcactgga | taatagcttt | agcttctttc | cagggtactgt | tatatctgca | tttgagacca | 5340 |
| gaggcattaa | catgggttaa | attgtgaaag | tgtctagcat | tagatattgc | agtagcaact | 5400 |
| aggcgatcag | ccatttgatt | cccttcagtt | aaaggtcctg | gaagaggtgt | atgagcccta | 5460 |
| atgtgagtga | tgtaaaaagg | gtgcattcta | ctctaaatg | ctgtttgcaa | ttgggtaaat | 5520 |
| aaagtcacat | gttgttcctc | tgtatgaagt | cataactgag | cattttcaat | taattgtatg | 5580 |
| gaatgaacca | cataggaaga | atcagaaatc | acattaatag | gcatatcaaa | agcagtcagt | 5640 |
| acctcaatta | cagctaaagc | tccacttttt | gagctgaagt | atagggcgtg | tgaaaaactt | 5700 |
| taccttttga | tccagaataa | gaggctttac | cattacaaga | cccatctgta | aaaacattct | 5760 |
| cagcaccttc | agttggttta | aatttagtta | ttttggggag | aatccaatta | gttaatttca | 5820 |
| aaaaattgaa | taatttcatt | ttaggaaaaat | gattatcaag | aatacccaca | aagtcagcta | 5880 |
| aatgggtttg | ccaagtaaga | ctatttatag | aagcttgctg | tatttgtgcc | tttgtgagag | 5940 |
| ggacaataat | ttttccagga | tcataatcct | gtaatttaac | aatccgaatt | ctcccatttc | 6000 |
| ttatcatcgt | agccatttga | tccaaataag | ctgtatagat | ctgtgaatta | gtatgtggaa | 6060 |
| gaaaaagcca | ctgtacaaag | tcttgctctt | atacaataac | accagtaagt | gaatgctgag | 6120 |
| ttggaaaaat | tagcaaatct | agggtctttt | ttggatctat | tctattttat | tgagatttat | 6180 |
| ggatttgctt | tttgattagc | tgcagctctg | cctcagcttc | ttttgttaat | tgctgagggc | 6240 |
| taatgagact | aggatctcct | ctaaggatag | aaaatagatt | actcagggca | taggtgggaa | 6300 |
| tgcttagagc | aggctcatatc | cgattaatgt | cccctagtaa | tttttgaaag | tcatttaatg | 6360 |
| ttttcaattg | atccctacgt | atagttactt | tctgtggcac | aatggtagtg | tcatttacta | 6420 |
| aggccccaa | gtaggagtaa | ggagtagtag | tctgaatttt | gtcaggagct | atataattaa | 6480 |
| actggcatga | gaaatcgagt | tttgcaagt | atcataacat | tggagtaata | tttcttgagt | 6540 |
| gggggcagca | caaagtatat | tatccatata | atgaataatg | taacactgtg | aaaatttttt | 6600 |
| acgagtaggt | tcaattgctt | gcccttcata | agtctggcaa | atttttgaac | tgtttcacat | 6660 |
| gccttgtagc | aacactttcc | aatacaaatg | ctttagtatg | ctgcagggtt | tttactgcag | 6720 |
| gaattgtaaa | tgcaaacagt | tcacagcctt | gctcagctaa | ggggatagta | aagaaacagt | 6780 |
| cttttaaatt | tatgactatt | aaaggccaat | tttttggaat | catagcagaa | gaaggcagtc | 6840 |
| cgggctgcaa | tgtccccata | ggttgtataa | ctgaattaat | ggctcttaag | tcagttaaca | 6900 |
| ttctgcattt | acctgatttt | ttcttaatta | caaaaactgg | agaattccaa | ggggaaaatg | 6960 |
| ttgagctatg | tgtccttttt | ctaattgttc | agcaactaag | tcctctaaag | cctccagttt | 7020 |
| ctctttactc | agcagccatt | gtgctatcca | aattggctta | tctgttaacc | attttaaagg | 7080 |
| tatatagggt | ctggaggctt | aacaatggcc | accatcaaaa | atgatatcct | aaaccttggt | 7140 |
| gggaactttg | tctttccgct | tgaagcattt | ccttcaaagc | ttgcaaattt | tttccctagtc | 7200 |
| ccataaccagg | gacatacccc | atttcatgca | tcatatgttg | actttgaggg | ctgtataatt | 7260 |
| attcttggaat | tagaacttgt | gatccccatt | gttgtaataa | atctcttccc | tataaattta | 7320 |
| taggtacaga | agttataatt | ttttgtatag | tcccagggtg | tccattgggc | ccttcacaat | 7380 |
| gcaaaatata | actactttga | tatactttta | gggctttacc | aactccaact | atgttaaatt | 7440 |
| gagcagggtg | aattgaccat | gcagatggcc | agtgtgttac | agaaatgatt | gaaatgtccg | 7500 |
| ctcctgtatc | taccaaactt | ttaaaattct | ttccctgaat | agttatttca | ccagtaggat | 7560 |
| gtttatcagt | aatttgattc | acccaataag | ctgctttgct | ttgtttattt | gtgcttccaa | 7620 |
| atcttccctg | tcatttaatt | tcacttttcc | ccatttccac | atatggcata | atcaggagct | 7680 |
| gtgctatatg | ctctcctggc | tctgctttcc | agggaaacaga | agtagatata | acaatttgaa | 7740 |
| tttccccctt | gtaatctgaa | tcaatgactc | ctgtttgtac | ttgcacgcct | tttaaattta | 7800 |

| | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| aactagacct | acctagaagt | aatcctacca | tccccgctgg | catcatctga | ctggagacag | 7860 |
| caaccttctt | taacagtccc | attacaaaag | gagaacctgt | tccatatgga | ttaatagctt | 7920 |
| gtttaaattc | tttgagtaat | ttaaaaaggaa | aaggctcaaa | tgtagctata | atatttccct | 7980 |
| gttgatctac | gggggtatatt | ctaacaggga | actgctaagc | ctctatatca | ccctctcttc | 8040 |
| taacttgctg | aattcctggc | tgaatagaac | tgagagtgg | cgctcgaggt | gctgctcagt | 8100 |
| cactggggcg | actacttttt | gcccagtgtc | ctctggaaaa | gaaagatctg | gaggatcagg | 8160 |
| ctactctttt | gcttcgaaat | aatgaggggg | tgcagaaggg | tagggacaaa | cctctccctc | 8220 |
| ctttgccact | ttagcttttag | ctggcaaaca | aacctgctct | gtcacctctt | ctgttacttc | 8280 |
| attatacttt | ccttcctcct | catctttagt | gtgaaaaggt | tccaaggtgg | aatgagctag | 8340 |
| agcccacact | tgcccattgt | taccctgatg | cttccgagct | ccccttctta | ctcaccatgg | 8400 |
| ggattgctta | agagtactcg | ggtatcctcc | agctttgttc | cacgttttcc | aaccattgct | 8460 |
| ccagcgagcc | ttcatcctgg | gtttgagtcc | ccacgttggg | cgccacttgc | cgagaccagc | 8520 |
| tcggtcgtgg | agaccctaac | ccagcagtgc | tagaggaatt | aaagacacac | acacagaaac | 8580 |
| atagagtgtg | gagtgggaaa | tcaggggatt | cacagccttc | agagctgaga | gccctgaaca | 8640 |
| gagatttacc | cacgtatttt | ttgacagcaa | gccgtgtata | agcattattt | ctgtagatta | 8700 |
| tagatttaact | aaaagtattc | cttacaggaa | acaaagggat | gggcaaaaac | aaagcgatgg | 8760 |
| gctctggcta | gatattctgca | gcaggaacac | gtccttaagg | cacagatcgc | tcattgctatt | 8820 |
| gtttgtggct | taggaatgcc | ttaagtgggt | ttccatcttg | ggtggaccag | gtgttccttg | 8880 |
| ccctcattcc | agtaaaccac | caaccttcag | tgtgggcgtc | atggccatca | caaacatgtc | 8940 |
| acagtgcctg | agagattttg | tttatggcaa | gatctggggc | cagtttatgg | ccagatttga | 9000 |
| gggcctgttc | ccaacagtgg | acaaagaaga | aaagctgctt | aaggcaaaca | ggcacatatt | 9060 |
| ttttaaaagt | acaatagcta | gacaaactaa | gagaatcctg | tgtatgtttt | acttttgtat | 9120 |
| ttttattttt | aatattttgt | gatacatag | agatgtatat | atttatgggg | cacttgagat | 9180 |
| attttgatac | aggcatacaa | tggataataa | taacatcacg | gtaaaagggg | tatccattac | 9240 |
| ctcaagcatt | tatcctttct | ttgtgtttata | aacaatccaa | ttaaaccttt | tatcataaaa | 9300 |
| tgtacaataa | tgttgactgt | ggtcaccctg | ttttgctatc | aaagaataaa | tcttattcat | 9360 |
| tttatctaa | tatatattgt | taccatttaa | ccatcccagt | cccctgctc | ctccaactac | 9420 |
| acttcccagc | ctctgttaac | catcattcta | ctctcttata | tccatgagtt | caattgtttt | 9480 |
| aatttgtagc | tcccacaaat | aagcgagaac | atgggatgtt | tgtctttctg | tgccttattt | 9540 |
| cacttaacat | aatatcctcc | agttccatcc | atgttgttat | atgacagaat | ttcattcttt | 9600 |
| cttatggctg | aatagtaccc | cattgtatat | atataccaca | ttttctttat | ccattcatgt | 9660 |
| gtaggtggac | acttggattg | cttctagatc | ttggctactg | tgaatagtgc | agcactaaac | 9720 |
| atgggcgtgc | agatatctcc | ttgatataat | gatttccttt | attttgggta | tatacctagc | 9780 |
| agtgggattg | ctggattgtg | tggtagctct | actgttagtc | ttttgaggaa | cctccaaatt | 9840 |
| gttctccata | gtgggtgtac | taattttacat | tcccaaccaa | caacagtgtg | caggggttctg | 9900 |
| ttttctccac | atccttgcag | cattttttatt | gcctgtcttt | tggataaaaag | ccattttaac | 9960 |
| tggggtgaaa | tgatatctca | ttgtagtttt | gatttagcatt | tctctgatga | tcattgatgt | 10020 |
| tgagcacctt | tttatatata | tgtttgccat | tcattgtgctt | tcttttgaga | aatgtctatt | 10080 |
| tagatctttt | gcccatttaa | aaaattggat | tatttagattt | ttttcttatt | gagttattttg | 10140 |
| atctccttat | atattctggg | tatttaatccc | ctttcaaatg | gatagtttgt | gaatattttc | 10200 |
| tcccattctg | tgtattgcct | ctgcactttg | ttgattattt | aatttgctat | gcagaaactt | 10260 |
| tttaacttga | tgtgatccct | tttgctcatt | tttgctttgg | ttgcctatgc | ttgtggggta | 10320 |
| tgacttaaga | aatctttgcc | cagaccaatg | tcattggagag | ttttcttaat | gttttctttt | 10380 |
| aatagtttca | tagtttgatg | tcttagattt | aagtctttaa | tctattttgt | ttttattttt | 10440 |
| gtatatggca | agatataggg | gtctagtttc | ttccgcata | ggatatctac | ttttcccagt | 10500 |
| accatttgtt | gaagagactg | tcccttctgc | aatgtatgtt | cttgacactt | ttattgaaaa | 10560 |
| tgaattcact | gtagatgtgt | ggatttgttt | ctgggttctc | tattctgttc | tggtgttctg | 10620 |
| tgtgtctgtt | tttatgccag | taccattctg | ttttagttac | tatagctctg | tagtataatt | 10680 |
| ttaagtcaga | taatgtgatt | cctccagttt | gttctttttt | gctcagaata | gctctggcta | 10740 |
| ttctgggtct | tttggtgttt | catgtaaaat | ttaggattat | attttattaa | catatttctg | 10800 |
| tgaagaatgt | cattgggtatt | ttgataggaa | ctgcattaaa | tctatagatt | gctttgggta | 10860 |
| gtaaggatat | tttaacaata | ttgatttttc | caatccatga | acatggaata | tctttccatt | 10920 |
| ttttgggtgc | ctctttaatt | tcttgcatca | gtgtttatag | tgtttctttc | atcagtgttt | 10980 |
| atagttttca | ttgtagagat | cttttactcc | tttgattaa | tttattcctg | ggtattttat | 11040 |
| ttgtagctgt | tgtagacgag | attactatct | tgatttcttt | ttcagattgt | tcactgttgg | 11100 |
| catatacaaa | tgctactgat | ttttgtatgt | tgatttttga | tactacaatt | tcactgaatt | 11160 |
| tgcttattac | agagagacta | aagatagtta | ggtccattac | caaagtgtgt | ttctgtcaca | 11220 |
| ttgaaaaatt | ataccatgag | aaggcacatg | cttctagtta | ttacagttca | tagatatgtc | 11280 |
| aatgtacaga | atgctgggtg | gacagttcac | aattgtttgc | tttatagtgt | tcactggaaa | 11340 |
| ttaaattact | aagggtaaa | taatcccagc | actgtgggaa | gctgaggcag | gatgattgct | 11400 |
| taatgccagg | agtttgagac | cagctggggc | aatgtagcat | gagcccatct | acaaaaaaa | 11460 |

| | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| aaaggaattc | taattaatat | gtggtactag | aattaccaga | aataataagg | gaaacaactc | 11520 |
| ggaaaagaag | gtaagatgtg | ttttgggtaa | gaacagctat | aaagtatgag | gggatgtttt | 11580 |
| gttttggtta | ggaaaaaata | aaataatatt | tgtcctaaag | tagaatgcct | ggttggttaag | 11640 |
| acaatgagaa | agagaaagag | tatagaagaa | aaactgaatg | gatataagaa | agttgtagaa | 11700 |
| ggttggtgga | taggaatcct | ggaaagggaa | ttttatatgt | gatcaaacta | agatttgaag | 11760 |
| aaaattctaa | gttttttttt | aaaaaaattg | agcatgaata | tcaaaaacat | actgacacag | 11820 |
| aactagaaat | ttgtcctcta | tgttaaaaca | acaagggtttt | cttggagtat | tggctgtgctc | 11880 |
| ttaataagaa | attgaaagac | ttttctttac | ctgctaagta | attggcctag | gaaatgaaga | 11940 |
| ttctgtgttt | tattgagata | atttattgtg | cttcatgttg | tctttattag | atctttgact | 12000 |
| gcctcagaga | cctgagttca | ccttatttaa | agagaaagag | tttctacaat | tatgtggcct | 12060 |
| tctttatttg | cctttgaagt | cctttaccaa | tcactctagt | taaatagaata | aatattgttt | 12120 |
| catagggacc | tgtgatccta | ttttaatcag | atatttttaa | ccttntgata | tttttgactt | 12180 |
| ctcaaaatca | aattctaaat | taaaacnnnn | nnnnnnnnnn | nnnnnnnnnn | nnnnnnnnnn | 12240 |
| nnnnnnnnnn | nnnnnnnnnn | nnnnnnnnnn | nnnnnnnnnn | nnnnnnnnnn | nnnnnnnnnn | 12300 |
| nnnnnnnggcc | ttcatctata | agtttttcc | tacccttttg | gtgggcccc | tcagcccagc | 12360 |
| tttttttttt | tttaaaggac | aggggtctcac | tctgttgcc | aggctggagt | gcagcagcac | 12420 |
| aattttggct | cactgcagac | tcaacctcca | gggctcgagt | aatcctccca | cctcagcctc | 12480 |
| ccaagtagct | gggatcacaa | gaatgtgcca | ccacaccag | ctaattcctt | atctcttata | 12540 |
| gagacagagt | cttactatat | tgcctaggct | ggtctcaa | tcctgggctc | aagtgatctt | 12600 |
| cccactcag | cctctgagta | gctaggacta | caggcatgca | ccaccatact | cggctaattt | 12660 |
| ttgtattcct | actgtagaga | catggggctc | cactttgttg | cctagggttg | tcttgaactc | 12720 |
| ctgggctcga | gtgattctcc | tgccttggcc | tcccaaagt | ctgggattac | aggcttgagc | 12780 |
| tatgtgcccc | acctcctttg | attttttctt | ttcttctgt | ttgctttact | cataggaaaa | 12840 |
| aacatataca | tttataaatc | ctgattcaaa | gactactttt | gtgtgagggt | attgagtttg | 12900 |
| cttttttttt | tcctttcatc | taggtcatgt | ggcctttggg | agatatgtgt | gtgtgtgagg | 12960 |
| ggtaggatgt | gtgtttaatt | ttttaaattt | atatttttgt | gctgtatgtt | gtgaaagatt | 13020 |
| tgctcatagt | ggatcaatga | accatctttt | ctaggcagtt | ttgttgaaaa | tgaagggtttc | 13080 |
| tctttgatatt | caagaatgac | caaattaaaa | aacaaaaaca | aggtattaat | tttctattgc | 13140 |
| taccataaaa | aattctcaca | aacttagtgg | cttaaaaaca | cacaaactta | gttttgata | 13200 |
| tcagaaatct | gacacctatc | tccttgggct | aaaatcaagc | tgtggcaggg | ctgcattcct | 13260 |
| ttctggaggc | tctagggggc | agtcctgttc | tgtcctggcc | ttttctagct | cctagaggcc | 13320 |
| atccacattc | ccttggcttg | ggcctcttcc | tctgtgtcca | gagccaggaa | cgcagcatct | 13380 |
| ccctgacctt | tcttccatct | cacatccttt | tctctgacca | cagctgggaa | aggttcactt | 13440 |
| attttaagga | ctcctgtgat | tagactgggc | ccatcttaag | gttcttaatt | taatcacata | 13500 |
| ttttattatg | tagagtcaca | tattcagggg | ttccagggtat | taggatgtgg | acctccttgg | 13560 |
| ggcaggaatt | ataattctgc | ctattacaaa | tgatgtaaga | gcataacag | tacagtgttt | 13620 |
| aaaatagtaa | tgagttggaa | ataaatgttc | caaaacagga | aaatacttaa | gttatagaac | 13680 |
| aaacaaatgt | tggagtacta | ggaagcctct | aaaaatcatt | gtaagagaat | aacataggcg | 13740 |
| atgaaagaag | tagaatacaa | agtttataaa | cagtgtgatc | ctgtactgca | tgtgggggtg | 13800 |
| ggtgatgccc | cactgggtgt | gtagaatttt | gagtgtattt | cattttcttt | ttttttttat | 13860 |
| ctttcttttc | tggggagggg | gggtactgtc | tgtgtgaagc | atgtgttact | actatcacat | 13920 |
| ccatctcccc | caaaactttt | aattaaatct | taagggaag | tgtattttat | ttaatagtgg | 13980 |
| taaaaagtaa | gtatcttaaa | agcaaagtct | aaagtcctga | taaaatgtac | attatactat | 14040 |
| aaaaggacat | aatctaaagg | caaaggcaaa | gggaaacttt | cagtaagcat | tcctaatag | 14100 |
| aagacctata | aatgaggtta | tgtagtaatt | acttgggctg | ggattaaagg | gacataagaa | 14160 |
| tgtctttaca | tacaagtata | gccaatatac | aaaatgcaca | acagtctagt | taccattaat | 14220 |
| caaaatgggtg | ggcaagtact | ataaaagtca | ccattaaaa | acagccttat | taaaatacat | 14280 |
| atattttatg | aaacgaaaac | tgacatttca | aaataattat | ttctgtgtgc | cctagacatt | 14340 |
| tgagcaattt | aatacttctg | ctggagtaca | gagaggaagt | cagtaagatg | gaatgtattt | 14400 |
| ggattttcaag | cagttatttt | taaaggaaag | ctattacttt | agaaactaaa | agcaaaacag | 14460 |
| aaaacaaaaa | ctttaaccag | tatcctttca | tctagctaat | tagatgtttg | ttcattcact | 14520 |
| atagatatag | aattttattta | aaacctcaaa | atgattgaag | taacagactc | agcactgtga | 14580 |
| ctttgggatt | gagtaggcta | taagagtggg | gtgaaatatg | accattcatt | ctataattca | 14640 |
| atattaaaaac | aaattcctgc | aaccaaagaa | atagtagtac | tgggttaggc | caggttccca | 14700 |
| agttcattgt | gtattctaga | tctatagtgc | taataaagag | aagacaataa | cttgtttgcc | 14760 |
| taccttatgt | cattgttaaa | aaaaatcact | aggtcaaaat | aatgggtcaa | gttgttgatt | 14820 |
| gaaaaaccca | gaattgcttt | tgtatttgct | gggataagct | agatgtctta | gttcattttg | 14880 |
| tgctgctata | acagaatacc | acagaactgac | taacttctaa | aaaacagaaa | ttttcttgca | 14940 |
| gttctggaga | ctgagaagtc | caagatcaag | gcactctcat | ctggtgaggg | ccttcttgct | 15000 |
| gtctcatcac | atggcagaag | gcagaagggc | aagagcacia | gagagagaa | ccattccaga | 15060 |
| gagtgctttt | cataatggca | ttaatctatt | cttaagggcg | gagccctcat | ggcctaaca | 15120 |

| | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| cctcccatta | gacctcactt | cccagtgctg | ttgcatttgg | gattcagtct | ctaacacatg | 15180 |
| aatatctggg | agacacattc | aaactatggc | actaggttat | gctgtagtaa | caactttattc | 15240 |
| ccttaacagg | cacagatgat | ggtccagggc | aactgtcccc | tgggtgtgaat | cagcaattca | 15300 |
| ggtcacttga | ctctttgtgac | tgtggcatca | cagggagaca | agaggtctcc | ctgttttcaa | 15360 |
| ctacagcaga | aagcacgagg | agtatgcagc | ccacctattc | tatgcttggc | ccagtggtga | 15420 |
| tacacagtac | ctctcttctg | cttacagcac | attggcctga | aatgggtcgtg | tggtcccact | 15480 |
| caagggggaa | ggaggctggg | aaatggaagc | ttctatgtgt | cctgaaaaga | aattataggc | 15540 |
| atactgctga | gtgctactta | tgtttaaaca | cacctataca | atthttggaga | agcttttcctt | 15600 |
| tattttttat | ccagttggaa | agactctgtt | ctctaaactt | cagagctgca | ggtaggacct | 15660 |
| ggtcctcatt | ctagagaaag | tagctctgca | gtcccagcag | aaagaagcct | gacttgaagc | 15720 |
| tccaccactt | tggctatctg | ttgggtgttc | ttcaaaagtg | agtgccaat | cactgtagta | 15780 |
| cccggcactt | ggtcttccat | gctttcatta | ttagggaac | tagatttgtg | gcacagctac | 15840 |
| tggagagtac | taggatccta | gtaagctggc | tttacaacaa | tgggtgtgtac | tgcctattht | 15900 |
| tgcttttatt | tcagagaaaa | taaaacgtaa | gataatagga | acaaatacat | gtgaactgct | 15960 |
| ggacggctat | tcaaaaatag | tttgccagag | taactggtaa | gcctgaaatc | tgtgtagcca | 16020 |
| tgaaggggct | catcatcggc | ttaattctga | agcaaaaactt | ggtgaaacac | gtggtggtta | 16080 |
| tcttggaggt | aaaatgctgg | cttcccagtg | ggaagtgaac | gtgtcaatca | ggttgtgttg | 16140 |
| ggagatgtga | taaaggctga | ggcagtcctg | cagctcatga | ttttatgcag | gggctaagat | 16200 |
| gagaaggatg | ttcaaaaaaa | ccaggggatg | ttattctagc | ttttgagcat | gagacagcct | 16260 |
| caaagcactg | ggaagctggg | atgctagcag | gaggcagtag | aaatgcaagt | gtgagaaaaa | 16320 |
| taaaggctgg | gctggcgtgc | tggcaggaaa | tggattcgaa | aggcaggtct | gataaatgtt | 16380 |
| tcagaaaaag | agagctgtca | ggatgaggtg | gagtgagctt | ggcagcctgg | gagttggcat | 16440 |
| gccattgatg | gtcaagacca | aatgctgttt | ctcctatcca | gccagaaatt | ttgcttttaa | 16500 |
| aatgacacta | gggctttgct | ctcaacaacc | actgtcctct | ctctcattct | ccctctcact | 16560 |
| gggttacctc | ctccttgctc | gtgacttctt | ctgtgatact | gactcttcca | tccatcatgg | 16620 |
| gtttttttct | tgattttttaa | gaataagtgg | aaattcctat | attgtttgtt | ctttcaattg | 16680 |
| tagaaaaat | tgaaaaccaa | aaggaaataa | tttaaaaaaca | ctgtaattgc | actacgaaga | 16740 |
| agcacttagt | ttggtatata | gccatgtgtt | gcttaatggt | ggggatata | tttgagaaat | 16800 |
| gtttttattag | gtgacttcat | cactgtacag | atatcataga | gtacttacac | aaaccagat | 16860 |
| tgtatagctg | actacacacc | tgtgatata | ggtatagctg | agtgtcctca | gtctgcaaac | 16920 |
| ctgtatagca | tgttactgta | ctgaataagg | caggaaattg | taacacaatg | ggaatcattt | 16980 |
| gtttatthta | atatatcaaa | acataaaaag | gtacagtaaa | aatgcaatat | aaaagataaa | 17040 |
| aaatggtagg | taccctgtga | gggcacctac | catgaataga | gcttgagga | ctggaagttg | 17100 |
| ctctgggtga | gtcagtgagt | ggtaaatgga | tgtgaaggcc | taggacacgg | ctgcacacta | 17160 |
| ctgtacaatt | cgtaagcact | acacttaggc | acactaaatt | tataaaaaat | atthtttctt | 17220 |
| aataggaaat | taaacttagc | ttactgtaat | ttgttacttt | atgaactttt | taactthtaa | 17280 |
| caactthtag | attgtthtta | agcaacattt | agctthaaac | acaaactcac | gtacagctgg | 17340 |
| acaaaaatat | tttctthtta | aatatcttta | ctctataagc | ttthttcatt | aaaaaattat | 17400 |
| ttttacttht | aattthtttt | tgttaaaaac | aaagacacaa | atatacacat | tagcctgggt | 17460 |
| ctacacaggg | tcaggatcat | caatatcact | gtcttccacc | tccacatctt | atcctgctcg | 17520 |
| aagggtgtca | ggggcaataa | cacgcacgga | gctgtcatct | cctatgataa | cagtgcacct | 17580 |
| ttctggagta | cctcctcaag | gaactgcctg | aggctattht | agagttaact | taaaaaaaat | 17640 |
| aagtaggagt | acactctaac | aataaaaagt | atgtaaatac | ataaaccag | taatagtcta | 17700 |
| ttatgattaa | gtgttatgta | ctatacataa | atatatatgc | tatactattg | taagactggc | 17760 |
| agtgcagtag | gattgtttac | gtacagcgct | accacaaaca | tgagcaatgc | attgtgctac | 17820 |
| aacgttctga | tggctatgac | atcattaggt | gataggaatt | tttcagtttt | gttatgatct | 17880 |
| tatggaacaa | ctgttgatc | tgtgggtccat | tgttggocaa | agtgtcatca | ggagttgcat | 17940 |
| gactgtatct | ccttccagac | ttgtgtttat | gtgtgtgctt | ttacaaaaat | ggaatatata | 18000 |
| cactattcta | ggaactcctt | ttctcattta | atattctgtg | aaaagctaga | cttattttatg | 18060 |
| aatgcttatg | agatgtthta | ctggcatttt | acactcaatg | tgacaacacc | atccttatca | 18120 |
| tttctaacct | atacctcatt | ttthttcattt | ttcattttcat | taactthttt | aacatcttht | 18180 |
| gagcccacag | taggggtcta | accacttgat | aattgtctta | gtttatthtt | tgttgctata | 18240 |
| acagaatacc | atggactggg | tagtttataa | agaaaagaag | tttatttagc | tcattggttct | 18300 |
| ggaggctagg | aagtccaaga | gcatggcacc | accggcatct | agtgtgggtc | gtcccatggc | 18360 |
| agaagcgggg | aaggacagaa | ggtggaagca | agtgcacaag | acagagagaa | aattgggtaa | 18420 |
| aattcatcct | ttttataagg | cgcccactcc | tgtgataact | aaccacttht | atgataatga | 18480 |
| cattaattca | ttaatccata | taatcacctc | ttaaagttcc | cacctctcaa | cactgttaca | 18540 |
| atggggatta | agthttcaac | acaaatthtt | gggaggacac | attcaaacca | tagcaatggg | 18600 |
| taaaattaa | ctcagatact | ctctthtttt | cctacccttc | tcatatthta | ttgtctcaaa | 18660 |
| atcactcatt | cattcaataa | atattthttt | catctgtcct | tacatggcct | gtgtgcagcc | 18720 |
| tgtgccctca | tgattthtct | attcagtgaa | attgagcacc | tactatgtgc | cagacttht | 18780 |

| | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| ttttggctct | gggcatacca | aagtgaacca | aatggggaag | gtaccttcta | tcattggtgct | 18840 |
| agtattctag | agggggaata | aataatacat | caatatatta | gctatccatt | attgctgtagc | 18900 |
| aaattacccc | aaaacttagt | gacttacaat | aatgacattt | actattttac | tgtgtttgtg | 18960 |
| ggttaggagt | tggggcatgc | tttagcaggt | cctctgcttc | aggggtctct | acaggccgca | 19020 |
| ctcatctcaa | ggctcaacta | ggggagaatt | ggctttcaaa | gtcattcatg | tggttggttg | 19080 |
| caggattcca | tttcttgctg | tgttggtctac | aggctactgc | caatcctggc | cacatgcacc | 19140 |
| tctctgttag | ggcagctcac | aatagggcag | cttgcttcat | cagagtaagc | aagcaagcaa | 19200 |
| gagccagaga | gagagagaga | acgagaggga | gagtgcgggt | aaaacaagag | tcattggtcct | 19260 |
| ttatgaccaa | tottgaagtg | acatcccatc | actataccat | atcctatttg | ttaggaacaa | 19320 |
| gtccctaggt | ggcccattga | aggggagggt | gttacacagg | gtttgaatac | caggaaatgg | 19380 |
| ggatcattgt | gagccgtttt | agaaggctgc | ctcccacagt | caagaaacaa | gacaattcca | 19440 |
| gatacactc | agtgttagag | agaaaatagg | acagggataa | gacgaagagc | atctgggagt | 19500 |
| gttggggagg | tagtcttcat | tgagtgttta | gagaggacct | caactgaggag | ataacagtga | 19560 |
| agcagagaac | taaagggcaa | gaaagggccc | acccggaaag | attcaagcct | tccagacaga | 19620 |
| ggaaacagaa | aaggcaaagt | ggcagaatga | gctctgcctg | tttgagggaag | aggggtggagc | 19680 |
| ccagtgcacat | ggagtgaatg | agcacgaagg | aagtgggctg | ctgctgagat | gagggccggg | 19740 |
| taatgagtac | atgaagtga | tagtgtctgt | gttttgaaat | actgagtaac | ttccctatgt | 19800 |
| cacagcttgt | aagtgcacac | gcacacacaa | ggatttgaac | ccgagtccat | ctgatgctaa | 19860 |
| aatccatgtt | tttgccacac | tagtgccttg | cagaattttac | tagaagggga | tgctgctggg | 19920 |
| tggtggtcag | ccactccagg | tgctcatgat | gtaagtaaga | ctttcagggc | taaaac cagg | 19980 |
| atagtccctg | ggaaattggg | atagctgggt | acccacaaga | cacgacagga | acactgagtt | 20040 |
| ctctgatgtg | atatgaaacc | caggatgagc | cggcagccct | gagtcagcct | gatgagaagt | 20100 |
| cggctgtgcc | ttttgttacc | aagaaaacaa | aactgtagca | taacccacc | ttgttggttaa | 20160 |
| aacaaaatgt | ttacattctt | ctgttctgct | tcgtctcaagt | cattcctgtg | ggacaagccg | 20220 |
| acctaacata | cagggtgtagt | caggggctag | gagagacct | ggcaggccct | tgtccattct | 20280 |
| cagtcactga | agtgcagacct | agggactcag | gaaggactca | gagttccctt | agtcattcatt | 20340 |
| cctctggggc | atcctgcttt | tggcataatt | actgatacga | gcacctctgt | tccctcctgt | 20400 |
| aattatacct | acccccccgc | ctccccgccc | cctgcaattg | cttagcacag | tatctggccc | 20460 |
| atgggaagtga | cttcatggaa | attcagcgga | tgaatgactg | gacaatgaac | aacgcacagc | 20520 |
| aatgtgtggt | gtgacagaaa | aggctgcacc | agcaaaaatt | ggaagctgat | ctttgggtat | 20580 |
| ttccttgcc | tggtcacttt | gcaatttcct | gggtgcttga | aacaggaagt | cagtgaactct | 20640 |
| aagccctgt | gggatctggc | acctcacatc | aaggtatctg | gaaagtcctt | attcttcaact | 20700 |
| tctccatgag | atcctaccct | acagaccagc | cctccttttg | gaatctctoc | tgctacacat | 20760 |
| tctgtgaccc | tgggactctc | tcttatttta | tttattttatt | tttatatgcc | cgtgtttcca | 20820 |
| aaggaataat | agggcagtta | aatatagcta | tgactgtgcc | tttccagagc | ccagaaaagt | 20880 |
| ctggaaaact | gggaatatcc | aaagctcagg | atgatattgc | gcacacaaaa | agtactaggc | 20940 |
| agagttagtg | ttagatagaa | acagagtaat | gtttagatag | aaagcagact | cagtcataata | 21000 |
| aaatatatgc | atatacagca | tgatctgcac | ttctgtgatg | cttctgaagt | acagaagcat | 21060 |
| tcagcacttc | agtaactctt | attgcaagtt | acctcttcaa | tcatttttct | tcaatcatta | 21120 |
| aaatgcttta | aaaaattttt | tagcttattg | aggatagact | gacaâaaatt | ttaatatatt | 21180 |
| taaagtgtac | aacttgtttt | gatatatgta | tacattgtga | aatgattacc | acaatcaagc | 21240 |
| taataaacat | gtccattatc | tcacgttaca | ttgtgtgaga | acacttaaga | tctactctta | 21300 |
| gcaaatacca | agtatttcga | gtatatcaag | tatgcaatat | attattacta | tacactcacc | 21360 |
| atgctgtaca | ttagagcttc | agaacttatt | tatcttataa | ctgaaagttt | gtaccctttg | 21420 |
| accaatgtcc | ccatttccac | cattcctagt | gaccactggt | ctactctgtt | tttatgagtc | 21480 |
| tggtcttttt | tagattccac | atgtaagtga | gattatacag | tatttgtctt | tctgtgactg | 21540 |
| gcttattttt | cttagcataa | tgctctgctg | gttcatccat | gttgttgcaa | atggcaagat | 21600 |
| ttccttattt | ttttaaggct | gaatactatt | tcattgtgta | gtatacacca | catttcttta | 21660 |
| tccattcatt | cattgatgga | cacttacggt | gattccaaat | tttggctatt | gtgaataatg | 21720 |
| ctgcaataaa | cataggagtg | tagacagctc | tttgacatat | tgatttccatt | ttccctgggt | 21780 |
| atatgcctag | aagagggtat | gctggatcat | atgggtgggt | tggttttaaat | attttgaggga | 21840 |
| aactccatat | tgttttctat | gatggctata | ccaatttaca | ttcccgccaa | taatgtataa | 21900 |
| cagttccctt | tctccacatc | cttgccaaca | cttatctttt | ggcttttttg | tactagccat | 21960 |
| cctaacagg | atgaggtgat | gttttattgt | ggtttttgatt | tgcatcttcc | tgatgattag | 22020 |
| tgatgtagag | cacattttta | tatgctgtt | ggccattttt | atgtcttctt | tgggaaaata | 22080 |
| tctattcaga | ttatttttcc | actttaaatc | cagttatttg | tttttttgc | attgaattga | 22140 |
| attttttatg | tatttttggt | agtaaccctt | tattatata | aagggtttaca | aattttctcc | 22200 |
| cattctatag | gttctttttt | tctttatttt | actataaagt | ttaaaatctt | gttttaattt | 22260 |
| ttgtgggtac | atagtaggtg | tatatattta | tgaggtgtgt | gagatgtttt | gatacaggca | 22320 |
| aattgtgtca | cagaaaatcc | cctcaagcat | ttatcttttg | tottatgata | caattaaact | 22380 |
| cttagttatt | ttaaaatgta | caattaaatt | atcgactata | gtcaccttgc | tgtactatca | 22440 |

| | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| aatagtcggt | cttatttcatt | ctttctaact | atTTTTtggg | taccatttaa | ccatacccat | 22500 |
| cccccgcc | cccccttacc | cacctctata | ggttcttttc | atTTTTgttaa | TTTTtttcc | 22560 |
| ttgctgtgca | gaataaaatg | ctttttcaaa | gcaagttaaa | gctgctctct | acttagatta | 22620 |
| agaaatcaac | ttaaagtatt | atatatatat | atatattaaa | aaaaaaaaga | | 22680 |
| aaacatctga | agtggctcca | gcagaaggaa | aggcaagatg | ggaatcaaag | tttaattctac | 22740 |
| attctttctg | cttctccttt | tctaccaaca | ctgtgttcaa | ctgcataaca | atagtaccaa | 22800 |
| tgagcacgag | aaagatagtt | tttagtttaa | agactatttc | agtttttagtc | agactacttc | 22860 |
| agacctcaga | ctccagactt | cagactccag | acttttagaca | acagactcca | catgccacac | 22920 |
| aacagacttt | cagactccag | cttcagactc | cagactccag | atcgcacact | tcagacaaca | 22980 |
| gactctagac | aacacactcc | agtctccaca | ttccacacga | cagactacag | actccacact | 23040 |
| ccagacaaca | gactccacac | tccagacaag | agactccaca | atccagacaa | gagactccac | 23100 |
| actccagaca | acaggagact | tttagactcc | agatcagact | tcgaacttca | gattcactcc | 23160 |
| agacttcaga | ctccagacca | gacttcagac | tccagaccca | gatttcagat | tttagacttc | 23220 |
| agactccaga | ccagattttca | tatttcagac | tccagaccag | acttctgact | tcagacttca | 23280 |
| gactcctgac | cctggatttc | agaactccagg | cttcagagtt | tggactttgg | actacttcag | 23340 |
| cttttagtcag | acagacaact | tcagtccacac | cactttttcac | ctctgccatc | taatctcgtc | 23400 |
| ttttgaacaa | ccccctaaaa | aggtaacatt | cccaagaaac | ccagaccag | aaacactgaa | 23460 |
| tgacatactc | aagactaccc | aactagtaag | ggggaggcca | cagtttccct | taccctggca | 23520 |
| acatgcacat | ggcaggccct | tcacttagct | ggtagaagga | acacaggctt | gggaaggaga | 23580 |
| tgtctgatgt | tcactccctg | acgacactct | tacttgcttc | aatgatctct | ctgagccttg | 23640 |
| ggtggcccat | ctgctaaaca | aggatgagtt | atttccctggg | gatgctaaga | gacttctgcc | 23700 |
| tcattgctgc | agtgtctctc | atgttgcccc | cttggaaatta | cttgttcaac | ttctttcttc | 23760 |
| cccactagac | tgtgagcttc | ttcaggtcaa | agaccaggac | tttcttgcca | ttaaccccag | 23820 |
| caactagcat | catgcctgac | caaagggcat | gctgatgaca | ataaacattg | attgtccgaa | 23880 |
| atcacatgcc | tgggtcccag | taggcgcttg | ctggttactg | ctttcttccc | atcctccctc | 23940 |
| tgccacccct | tcctctctga | gtctggaggg | gatggccatg | tactagccag | gggcagtgct | 24000 |
| cacaggaaat | tcagggtcctt | tgcagcagtc | agtttcatTT | cctatgatta | aaatttctgt | 24060 |
| gaaacatatt | atnnnnnnnn | nnnnnnnnnn | nnnnnnnnnn | nnnnnnnnnn | nnnnnnnnnn | 24120 |
| nnnnnnnnnn | nnnnnnnnnn | nnnnnnnnnn | nnnnnnnnnn | nnnnnnnnnn | nnnnnnnnnn | 24180 |
| tattaatatg | tgcttcaaaa | attatatgaa | attcttagaa | accagatagt | cgtgggtataa | 24240 |
| tactatcagc | caaaatttcta | attatcgtga | aatattatgt | gttgcgagaag | taatacaatt | 24300 |
| tccttatgaa | tggcattatt | gtgaactctc | atcatatctt | taaccaagtc | catttttaagc | 24360 |
| tttgtcatct | acaaagagtc | acttgtttta | ctctgggtact | ttccggaaca | ctgtgaaaaa | 24420 |
| caattatata | aaggggtgtgg | acctataaga | caaacaacca | aacaaaaatc | gtaaagtgtt | 24480 |
| cttttaaaag | attcgtggaa | aggactctga | taagtacagg | tttctgataa | ctttaagatc | 24540 |
| atactactgg | actgggtaag | aatttccaga | actctagcaa | agaagtggat | tggttcataa | 24600 |
| aactgccaac | ccaacatgaa | gcagaataag | aattaattga | ataccaggga | aatgctttgg | 24660 |
| cagattttca | tgctaagtca | gccagtactg | aaattgttaa | gatatgcaat | ttgaaagaac | 24720 |
| actataatat | tcacttgaat | caaattatct | atgataacct | atttaaattga | acagcatcat | 24780 |
| gcacctgaat | tggagaaaca | aaactgatat | ttaaaatgat | ataaatttag | tgttaaatgt | 24840 |
| ggcctcatgg | atcagacagc | tatctgggtcc | tttctgagtc | catatagctg | ccattattaa | 24900 |
| aagtcttgca | ctctatgact | catcacagaa | tagataacgt | gaaattatga | aaaaattatg | 24960 |
| gtgttatgac | tgttctaata | ttgctaaaat | ggcttataat | caatgtttgg | tttgtcaaat | 25020 |
| ccacaatttt | tataagataa | taaaaacctc | agttggtaca | tttccaccat | ccactggact | 25080 |
| atTTgaacat | ttacagatgg | attgcattca | gttgcctcat | tgggaatctg | caggaaactt | 25140 |
| aagtaaatgc | tggatatgtc | atgttgaacc | aaatactaatt | atgcttttaa | agatcttcta | 25200 |
| attcacccta | tagcagattt | cactgatatt | ccaagtgtga | ctacctgttc | aaattgcaca | 25260 |
| tctgggtctt | ctatagggtt | aggctttttg | agtcacatat | tcagatttca | tgtttaaagc | 25320 |
| taacagtaga | caaaacatat | aggagaggct | ttacagttaa | attattccag | aaactgaata | 25380 |
| ataaaaccaa | aaggagagat | aattagacag | tttgtagacg | aattcataac | cctaattctc | 25440 |
| taattgttgg | tagcctccat | tgatgataat | taatagtggg | gccttagata | aataactacta | 25500 |
| ttgcttcccc | gttgatgacc | cctgtagcac | acagtgtccc | acagggaact | gtctcttggtg | 25560 |
| ccctctagc | atatattttt | atctatgaag | gattttaaata | tcaatcatag | gcacaggcaa | 25620 |
| ctocatgtcc | cagtcagtag | gaaataagaa | gtcagtggtg | attagggatt | ctaacagtac | 25680 |
| cactgtcact | ccataaccaa | ctgaaaattt | gacattgttc | tatacctctt | aatttgcact | 25740 |
| atggtataaa | aaggaaacttt | ctagcaggta | cgaatccctc | taaatgggca | tcttttgttc | 25800 |
| aaatgctcct | tccttggtct | ggaataaatg | taaatgaggt | tatgattaga | aatccccctc | 25860 |
| aaacattagc | tactacagct | cactctactg | caaaggctat | atagttgccc | agtgaagttc | 25920 |
| tctaaattct | cttgctaaag | tttcttttaa | taacaggatt | gccttgaaact | atctgttggt | 25980 |
| ttgtagtggg | gcaggggggtg | tgatagggga | cactgtgtat | aatagctaatt | acatccctact | 26040 |
| gcacttgcac | aaaggaatct | gttataaaga | aatgaataa | aaggtataaaa | agttggcaag | 26100 |

| | | | | | | |
|-------------|-------------|------------|-------------|-------------|-------------|-------|
| aagaaaacca | tcattatgtc | ttgaggatga | ttgggggatac | agaaaatgag | aagaatccac | 26160 |
| aaactattag | aattactaag | ttaatttagc | aaggttgctc | aatgcatggg | cagtatacaa | 26220 |
| aatttaattg | aatctctaca | tatatgtata | tgccatattg | tgttagattg | ttttgcattg | 26280 |
| ctataagggg | atacctgaag | ctgggtaatt | tataaagaaa | agaggcttat | ttgggtcatg | 26340 |
| gttctgcagg | ctgtacaagc | atggcactag | catctgtttg | accttaggaa | gcctttactc | 26400 |
| atgggtggaag | aagggggagc | aggcatgtca | tatagtgaga | gagggagtg | gagggaggga | 26460 |
| gcaagagtga | agggggagggt | cccagactct | ttttaaataa | cctgaaatcc | tgtgaacaga | 26520 |
| gtgaaaacta | acttattacc | atgaagagca | caccaagcca | ttcatgaggg | gtataccttc | 26580 |
| atgacccaaa | cgctttccac | caggtcctac | cttcaacact | ggggatcaca | tttcaacatg | 26640 |
| agatttgagg | aggacaaaca | tccaaatcat | atcacatata | taaatatgta | aaactatttt | 26700 |
| aaatgttttt | aaagtatcga | atagaaataa | atctcacaaa | atatgcttaa | gaactttaag | 26760 |
| caaaaaccat | aaaatactat | tgtgataagt | taaagaagac | ctaaataaat | ggagagatct | 26820 |
| gtcatgctca | tggtattgga | gattcaatac | tgtaatgata | tgaatagttc | ccaaattggt | 26880 |
| ctatagattc | aaaacattgc | cagttaaaat | ctcagtgga | tttgtttttt | tgaactgac | 26940 |
| aagctgattc | tgccatttat | aataatattc | aaaggggcaa | gaataaccaa | gacacatttg | 27000 |
| aagaagaaca | aggaggaaga | agaacgtatt | tgaagaagaa | taagggaactc | tattaagtgt | 27060 |
| atatctccta | tatattgaga | tacacatttg | aaatacatct | atcacctaga | tattgagata | 27120 |
| tattatacat | ttaatatagt | gtgttgctgg | tatagggata | gacaaatgaa | cattggatca | 27180 |
| gaatagcact | gaaacaagat | ctacccctat | atgggcatgt | ccctattaac | aaaaaaatat | 27240 |
| tgttgattat | ttcctcaaga | tgatctgtaa | aaaacaagtt | aattgaacat | ccatatggga | 27300 |
| aaaaagtga | tccttctgct | acctcaaata | tcaacccag | gtagattata | gatctaaaag | 27360 |
| tgaagggcaa | agcaataaag | attttagaaa | ataacaaaga | gaatatcttt | atgaaaatac | 27420 |
| aggaaatatt | ttaaaaatag | gctagaaaac | tcactattaa | aata.tataaa | atataagaac | 27480 |
| atctgttcat | caaaagtact | atagtttgaa | tagcagtgtc | tcctccaaaa | ttcatattga | 27540 |
| aacttaatcc | ccattgtaac | agtactaatc | ctaaaactaa | gtat.taagag | gtgtgacctg | 27600 |
| tgggaagtga | ctaagtcatg | aggggtcttt | cctcagggtat | gggattagca | tccttataaa | 27660 |
| aggccttgag | atggaatgta | gtgccccctt | gccctcttgc | gttctcccat | gtgaggacac | 27720 |
| agcaacaagg | caccatcttg | gaaggagaga | gaagccctca | ccagacaaca | gtgcacatgc | 27780 |
| cttgatctta | gacttcccag | cctccagagc | tataataaat | acat.ttctgt | tccttataaa | 27840 |
| ttacttggtc | tgttgatttt | tgttacagaa | gcactaatgg | actaagacaa | aaagattcca | 27900 |
| ttatgaaagt | gaaaaggcaa | cgcagagtg | gcagaagctt | ttggagatga | tgaatatgtt | 27960 |
| tacttcctgg | attgcggtga | tgataccatg | agtgtatata | tatgtgtgta | tacataatgt | 28020 |
| atacaaatgg | tgttcattga | ttatgtacag | tttctttgta | taccaattat | accttaataa | 28080 |
| agctaaggaa | aaaaaaaaaga | aatccagaa | taaatatgca | tggtatgacc | cattttatta | 28140 |
| aaaaaaaaaa | gaggggaatgc | gaagcagtg | ttttgggtgcg | aacacaaaaa | ttctggcttc | 28200 |
| aacagcattt | aaattcccaa | accaagcatg | tttgtgtttt | aattctttgt | ggccataaat | 28260 |
| tgtacagctc | aggcctttat | agtctctcag | attctgtgaa | tgtggggaat | tagttttact | 28320 |
| cataaaaagt | tttgttcttg | gggataaatt | ttttaaaaaa | atttttgtat | agttagcaca | 28380 |
| ctgagaaaat | acagacaaag | gcatacagat | gcaagaaatg | aggtagctga | atagaccaa | 28440 |
| gaatgatata | gggcccagaa | ggtaggcaaa | gagaaagttg | ttgggtttat | ggttacaagt | 28500 |
| aaactagcag | ttgtgggtgca | gatagtttta | tttccccac | attaatctga | acagcccac | 28560 |
| cagacttaaa | cactgctttt | tgcatttact | tctaggcagg | aagacagggt | tctgatgggt | 28620 |
| tgagtctcct | tcaactcagc | aaaccacctt | ggtctgcctc | gagtttccaa | caccctcct | 28680 |
| gcctgctagt | gataggtgtg | aggcagggtg | atgaacatgg | aacttttttc | ttttgggtccc | 28740 |
| aaagcatgct | actcctggag | tttcattcag | tgaatgagaa | ctatagtttg | gttctgtgag | 28800 |
| atctctatga | atcaaggcgg | ccactgaagc | ggagaaaaga | aatgcttaaa | tgtaagaaa | 28860 |
| gtttgaagtg | cagaaaaagg | tgattgtaaa | tccatatggt | taagcttagc | ccatttctta | 28920 |
| aaagcttga | ttgctcatte | ctccattcat | tgatttactc | actcttccaa | tccatgttat | 28980 |
| tgagtcttgc | tctgtaattc | cggatgggtg | tgcttttaag | tactgcatag | tggttgatg | 29040 |
| tctgtgttag | cattgctgaa | tgtatcaggg | aattcatttt | tttatcccca | cacactcatt | 29100 |
| cgttccacac | atatgtgtgt | gtctctctct | ctctctctct | ctctgtgtgt | gtgtgtgtgt | 29160 |
| gtgtgtgtgt | gtgtgtgtgt | gtgtgtgtta | tgccatagaaa | acatt.tctca | agaattagaa | 29220 |
| ttacgatatg | ctgtcaaaca | caatgactta | tttgaacctc | ttttatttgt | aggttgaagc | 29280 |
| actggacaat | gccacatact | ttgtggatgg | tgtgggtctt | gggggtcctc | atcagcctct | 29340 |
| ccaaggaaga | atcctccaat | caggcttctc | tgtcttgtga | ccgcaatggg | atctgcaagg | 29400 |
| gcagctcagg | atctttaaac | tccattccct | cagggtcac | agaagctgta | aaaagccttg | 29460 |
| acctgtccaa | caacaggatc | acctacatta | gcaacagtga | cctacagagg | tgtgtgaacc | 29520 |
| tccaggctct | ggtgctgaca | tccaatggaa | ttaacacaat | agaggaagat | tctttttctt | 29580 |
| ccctgggcag | tcttgaacat | ttagacttat | cctataatta | cttat.ctaat | ttatogtctt | 29640 |
| cctgggtcaa | gcccctttct | tctttaacat | tcttaaaact | actgggaaat | ccttacaaaa | 29700 |
| ccctagggga | aacatctctt | ttttctcatc | tcacaaaatt | gcaaa.tcctg | agagtgggaa | 29760 |

| | | | | | | |
|-------------|------------|-------------|-------------|-------------|-------------|-------|
| atatggacac | cttcactaag | attcaaagaa | aagatTTTTgc | tggacttacc | ttccttgagg | 29820 |
| aacttgagat | tgatgcttca | gatctacaga | gctatgagcc | aaaaagtttg | aagtcaattc | 29880 |
| agaatgtaag | tcactcgtg | cttcatatga | agcagcatat | tttactgctg | gagatTTTTg | 29940 |
| tagatgttac | aagttccgtg | gaatgttttg | aactgcgaga | tactgatttg | gacactttcc | 30000 |
| atTTTTcaga | actatccact | ggtgaaacaa | attcattgat | taaaaagttt | acatttagaa | 30060 |
| atgtgaaaat | caccgatgaa | agtttgtttc | aggttatgaa | acttttgaat | cagatttctg | 30120 |
| gattgttaga | attagagttt | gatgactgta | cccttaatgg | agttggtaat | tttagagcat | 30180 |
| ctgataatga | cagagttata | gatccaggta | aagtggaaac | gttaacaatc | cggaggctgc | 30240 |
| atattccaag | gttttactta | ttttatgata | tgagcacttt | atattcactt | acagaaagag | 30300 |
| ttaaagaat | cacagtagaa | aacagtaaag | tttttctggt | tccttgttta | ctttcacaac | 30360 |
| atttaaaatc | attagaatac | ttggatctca | gtgaaaattt | gatgggtgaa | gaatacttga | 30420 |
| aaaattcagc | ctgtgaggat | gcctggccct | ctctacaac | tttaatttta | aggcaaaatc | 30480 |
| atTTggcatc | attggaaaaa | accggagaga | ctttgctcac | tctgaaaaac | ttgactaaca | 30540 |
| ttgatatcag | taagaatagt | tttcattcta | tgcctgaaac | ttgtcagtgg | ccagaaaaga | 30600 |
| tgaaatattt | gaacttatcc | agcacacgaa | tacacagtgt | aacaggctgc | attcccaaga | 30660 |
| cactggaaat | tttagatggt | agcaacaaca | atctcaattt | atTTtctttg | aatttgccgc | 30720 |
| aactcaaaga | actttatatt | tccagaaata | agttgatgac | tctaccagat | gcctccctct | 30780 |
| tacccatggt | actagtattg | aaaatcagta | ggaatgcaat | aactacgttt | tctaaggagc | 30840 |
| aacttgactc | atttcacaca | ctgaagactt | tgggaagctgg | tggcaataac | ttcatttgct | 30900 |
| cctgtgaatt | cctctccttc | actcaggagc | agcaagcact | ggccaaagtc | ttgattgatt | 30960 |
| ggccagcaaa | ttacctgtgt | gactctccat | cccatgtgcg | tggccagcag | gttcaggatg | 31020 |
| tccgcctctc | ggtgtcggaa | tgtcacagga | cagcactggt | gtctggcatg | tgctgtgctc | 31080 |
| tgttcctgct | gatcctgctc | acgggggtcc | tgtgccaccg | tttccatggc | ctgtggtata | 31140 |
| tgaaaatgat | gtgggcctgg | ctccaggcca | aaagggaagcc | caggaaagct | cccagcagga | 31200 |
| acatctgcta | tgatgcattt | gtttcttaca | gtgagcggga | tgcctactgg | gtggagaacc | 31260 |
| ttatgggtcca | ggagctggag | aacttcaatc | cccccttcaa | gttgtgtctt | cataagcggg | 31320 |
| acttcattcc | tggcaagtgg | atcattgaca | atatcattga | ctccattgaa | aagagccaca | 31380 |
| aaactgtctt | tgtgctttct | gaaaactttg | tgaagagtga | gtgggtgcaag | tatgaactgg | 31440 |
| acttctccca | tttccgtctt | tttgatgaga | acaatgatgc | tgccattctc | attcttcttg | 31500 |
| agcccattga | gaaaaaagcc | attcccagc | gcttctgcaa | gctgcggaag | ataatgaaca | 31560 |
| ccaagaccta | cctggagtgg | cccatggacg | aggctcagcg | ggaaggattt | tgggtaaatc | 31620 |
| tgagagctgc | gataaagtcc | taggttccca | tatttaagac | cagtctttgt | ctagtTggga | 31680 |
| tctttatgtc | actagtTata | gttaagtTca | ttcagacata | attatataaa | aactacgtgg | 31740 |
| atgtaccgtc | atTTgaggac | ttgcttacta | aaactacaaa | acttcaaatt | ttgtctgggg | 31800 |
| tgctgtttta | taaacatatg | ccagatttaa | aaattgggtt | ttgggttttt | ttttttctat | 31860 |
| gagataacca | tgatcataag | tctattactg | atatctgaat | atagtccctt | ggtatccaag | 31920 |
| ggaattgggt | gcaggatcct | cgtggatatc | aaaattcata | gatgatcaag | tcccttataa | 31980 |
| gagtggcata | gtatTTgcat | ataacctgtg | tacattctcc | tgtatacttt | aatcatctc | 32040 |
| tagattactt | atgataacca | atacaatgta | aatactatgt | aaatagtTgt | actgtctttt | 32100 |
| tatttatatt | attattgtta | ttttttatTT | tcaaaatttt | taaaacatac | ttttgatcca | 32160 |
| cagttgggtg | acttcatgga | tgcagaaccc | atggatatag | agggccaact | gtaatctgta | 32220 |
| gcaactggct | tagttcatta | ggaaacagca | caaatgaact | taagattctc | aatgactgtg | 32280 |
| tcattctttc | ttcctgctaa | gagactctc | tgtggccaca | aaaggcattc | tctgtcctac | 32340 |
| ctagctgtca | cttctctgtg | cagctgatct | caagagcaac | aaggcaaggt | atTTggggca | 32400 |
| ctccccaaaa | cttgTtgcta | ttcctagaaa | aaagtgcTgt | gtatttcccta | ttaaactTTta | 32460 |
| caggatgaga | aatactagag | ggtgtatTTt | catgtgatct | ggatctgtct | ttctggctat | 32520 |
| tagatagggt | tctccagcca | tagttacttg | agagagtTgag | tacacagtgc | aaggTacagt | 32580 |
| aaattatgta | tttctgtaat | ttaacaaaat | aaatactcag | tttaggagaa | tttgaaagac | 32640 |
| acttcccaca | tccggactct | ggtcttctc | agcctctaac | taccttttga | gttctagtTta | 32700 |
| ttgtccaatc | actctgactc | tcagttctctg | tttttttagcc | tatatctcct | gcactttggt | 32760 |
| gctttttcct | tcttcgaaaa | gtcttgTTTT | taatttctaaa | aaagcctgcc | ctttttcccc | 32820 |
| ttctgaatat | tttaaaaagt | acatgtgagc | taaatagatt | tttaagcaaa | tatataccta | 32880 |
| gagtttctc | atcacacaac | cacacagcaa | cccccgact | ccccctaccc | taaaccaaca | 32940 |
| aaaccttaca | acacacacag | atcacctcta | caacaacgac | tcatacaacac | ctcttttctc | 33000 |
| cataccacac | attcatcaca | aaatataaca | acaaaacaca | tcttattact | acctactctc | 33060 |
| ttccccctcaa | agtatatact | taaaaaccct | cctactcatt | atatacgatc | acaaagataa | 33120 |
| cgacacacat | cccataatcc | tacctaacca | gtaaccacac | atcg | | 33164 |